IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of	
Shigeru YANO et al.	Group Art Unit: 1771
Application No.: 09/913,725	Examiner: Hai VO
Filed: August 17, 2001	Confirmation No.: 3808
For: POROUS FILM AND MANUFACTURING METHOD THEREOF	

REPLY BRIEF

Mail Stop Reply Brief
Commissioner for Patents
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Sir:

This Reply Brief is submitted pursuant to 37 C.F.R. § 41.41 and is in response to the Examiner's Answer mailed November 2, 2005, in the above-identified application.

Claims 1, 2 and 5-7 stand finally rejected under 35 U.S.C. §103(a) as obvious over JP 11-158305 combined with U.S. Patent No. 6,284,828 (Takayama). It is the Appellants' position that the Examiner has failed to establish a *prima facie* case of obviousness for at least the following reasons.

JP '305 relates to the preparation of porous films by stretching a film molded from a composition containing a blend of polyolefins, at least 50 wt. % of an inorganic filler and ethylene or methylene-bis-stearamide or methylene-bis-oleiamide. The stretching provides microscopic pores which allow the passage of water vapor but prevent the passage of liquids. This document discloses that prior art additives such as fatty acid amides, liquid paraffin, fatty acid esters and castor oil have not been effective in preparing stretched polyolefin films; note paragraphs [0006] and [0007] and Comparative Examples 5, 6 and 9-12.

The data measuring the properties of porous films prepared in the Comparative Examples is set forth in Table 2 on page 36/38 of the translation. It can be seen that the film of Comparative Example 5 containing refined castor oil is poor in adhesive strength and exuding properties; the film of Comparative Example 6 containing hydrogenated-castor oil-caster wax is poor in pliability and touch; the films of Comparative Examples 9 and 12 containing oleic acid amide and ricinoleic acid amide, respectively, are poor in extrusion properties and pliability and touch; and the films in Comparative Examples 10 and 11 containing stearamide and ethylene-bis-behemic acid amide, respectively, are poor in uniformity of thickness, extrusion properties and pliability and touch. Thus, only the porous films containing ethylene or methylene bis stearamide or methylene-bis-oleic amide possessed acceptable uniformity of thickness, extrusion properties, pliability, touch and adhesive strength.

JP '305 does not disclose porous films containing a liquid ethylene-α-olefin oligomer. The rejection relies on Takayama '828 for a suggestion of adding a liquid ethylene- α-olefin oligomer to the film-forming compositions of JP '305.

Takayama '828 relates solely to the preparation of polyacetal molding compositions and specifically to means for improving compatibility, dispersibility and interfacial adhesion between the polyacetal resin and an olefinic polymer (Abstract). This document has nothing to do with the stretching of films composed primarily of large amounts of inorganic filler and a polyolefin resin to obtain porous films. Thus, JP '305 and Takayama '828 are in non-analogous art areas. The problems addressed in Takayama '828 relate to improving compatibility between a polyacetal resin and a polyolefin and providing improved abrasion resistance and frictional properties to polyacetal molded products. These are not relevant to the problems addressed in JP '305, i.e., improving dispersibility between polyolefins and inorganic fillers to ensure compatibility and the production of porous films having acceptable uniformity of thickness, moisture vapor permeability, etc. Accordingly, those of ordinary skill in the art of stretching

films of polyolefin/inorganic filler blends to obtain porous films would not have been motivated to look to the art area of polyacetal molding compositions for a teaching to modify the invention of JP '305.

The Answer on page 3, last three lines, argues that the lubricant in Takayama '828 is used for improved dispersibility and processability, referring to the Abstract; column 5, lines 31-35; and column 8, lines 10-15. Appellants note that the Abstract does not mention lubricants. The disclosure in column 4, lines 52-54 indicates that it is the required alkylene glycol polymer (C) which improves dispersibility of component (B) (i.e., polyolefin) in the polyacetal. There is no disclosure in Takayama '828 that the lubricants improve dispersibility of any of the components.

The Examiner has provided no reasons as to why one of ordinary skill would select liquid ethylene-α-olefin oligomers from among the many hundreds of compounds listed in Takayama '828. Moreover, there would have been no reasonable expectation that using the liquid oligomers in the compositions of JP '305 would have been successful given the lack of predictability in this art. As shown by the Comparative Examples of JP '305, one cannot reasonably predict that a given lubricant would provide the necessary compatibility in the polyolefin/inorganic filler blends to yield porous films having acceptable properties.

The Answer argues that Takayama '828 teaches a polyacetal resin composition comprising a polyacetal resin, a polylefin resin, an inorganic filler and lubricant (Examiner's Answer, page 5, lines 6-8). But Takayama '828 actually teaches a polyacetal resin composition comprising a polyacetal resin (A), a specific polyolefin resin (B), and an alkylene glycol polymer (C) having a primary or secondary amino group and an inorganic filler (D) (claim 1, col. 2, lines 18-33). A lubricant (E) is optionally added to said polyacetal resin composition (col. 5, lines 29-32). The alkylene glycol polymer (C) is an important component in the

polyacetal resin composition of Takayama '828. The incorporation of component (C) improves the dispersibility of the polyolefin resin (B) in the polyacetal resin (A) (col. 4, lines 53-54).

Takayama '828 further discloses that when the lubricant is used together with the above-mentioned resins (i.e., a fluororesin and a polyolefinic resin), the lubricant inhibits compatibility between these resins and the polyacetal resin (col. 2, lines 1-4). Moreover, in the polyacetal resin compositions in Takayama '828, enhanced effects can be obtained by further using a lubricant (E) in addition to the above-mentioned components (A) to (D) (col. 5, lines 28-32). That is, if the polyacetal resin composition does not include component (C), the lubricant (E) can not give enhanced effects. On the other hand, the resin composition in the JP '305 reference does not include an alkylene glycol polymer (C).

In addition, the polyolefin resin (B) in Takayama '828 is a modified polyolefinic polymer obtained by modifying an olefinic polymer (B-1) with at least one unsaturated carboxylic acid or acid anhydride thereof or derivatives thereof (B-2) (claim 1, col. 2, lines 22-26). To the contrary, in the resin composition in JP '305, the polyethylene resin (A) comprises a linear low density polyethylene and a branched low density polyethylene (claim 1, page 12, [0013] of the English translation of JP '305). Therefore, the polyolefin resin (B) in Takayama '828 is different from the polyolefin resin (A) in JP '305.

As a result, since the polyolefin resin in JP '305 is different from the modified olefinic polymer in Takayama '828 and the resin composition in JP '305 does not include the alkylene glycol polymer (C) in Takayama '828 which is an important component in the polyacetal resin composition of Takayama '828, one having ordinary skill in the art would not seek to combine their respective disclosures.

With respect to the comparative data in the present specification, Appellants provide the following comments. In Comparative Examples 2 and 3, since the amount of ethylene/alpha-olefin oligomer used was outside the range claimed in claim 1, the addition of ethylene alpha-

olefin oligomer did not give the desired uniformity in thickness or moisture permeability of the porous film. In Comparative Example 7, the weight ratio of linear low density polyethylene and branched low density polyethylene was outside the range claimed in claim 1. Thus, the addition of ethylene/alpha-olefin oligomer did not give the desired porous film.

For at least the reasons presented herein, Appellants respectfully request the Board of Appeals and Interferences to render a decision reversing the Examiner's rejection.

Respectfully submitted,

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